PERSONAL COMPUTERS: The Micro Channel Debate Goes On

By PETER H. LEWIS – THE NEW YORK TIMES
Published: February 14, 1989

The Clone Wars saga continues.

In our last episode, the chieftains of nine Clone colonies gathered to hatch plans to overthrow the Empire of I.B.M. by neutralizing the Empire's secret weapon, a 32-bit data bus architecture called the Micro Channel. The 32-bit bus is supposed to double the performance of a personal computer, but at a high cost.

Agents for the Clones captured plans for the Micro Channel, and their scientists quickly analyzed the diagrams to find a weakness.

"Aha!" said the chief scientist. "If we can invent our own 32-bit bus, one that allows users to keep their old add-in expansion boards, the Empire will crumble!"

Meanwhile, back at the Empire, its leaders watched, with a hidden camera, as the Clone chiefs plotted.

"Don't they know that the Micro Channel is invincible?" one sneered. "And even if they succeed in finding a weakness in our plans, we have more surprises for them!"

We interrupt for a technical explanation: A bus is the pathway over which bits of information flow between the microprocessor and other parts of a computer. Most computers have a bus that is 8 or 16 bits wide, because the microprocessors they are built around can process only 8 or 16 bits of information at a time. Newer microprocessors, like the Intel 80386, can process 32 bits of information at once, so a 32-bit bus is needed to take full advantage of the processor power.

I.B.M.'s Micro Channel is the only 32-bit bus available today, and then only on high-end PS/2 computers. (Apple's Macintosh has a 32-bit bus, but it uses different software.) I.B.M.'s rivals, the clones, are developing an alternative to the Micro Channel for standard personal computers: EISA, for Extended Industry Standard Architecture.

The smoldering debate over the 32-bit bus standard caught fire again recently. Many PC owners are confused about its significance.

Unless you plan to use a PC as a powerful network file server, the debate is inconsequential, at least for now. It is irrelevant to owners of International Business Machine PC, XT and AT computers and compatibles, except for the issue of salvaging old add-in boards. Apple owners will find the 32-bit bus useless.

The 32-bit bus may have some benefits for owners of powerful Intel 80386-based personal computers using the Unix operating system or its derivatives, when applications software becomes available. (The same holds true for the Intel 80486-based machines now in development.) A handful of programs may show up later this year. Still with us? The EISA group, AST Research Inc., the Compaq Computer Corporation, Epson America Inc., the Hewlett-Packard Company, NEC Information Systems Inc., Olivetti, the Tandy Corporation, Wyse Technology and Zenith Data Systems, recently announce that the key components of the EISA design had been finished, with the first personal computers incorporating it expected to be available by "late this year."

The announcement provided the first glimpse of what an EISA machine, and EISA plug-in boards, will look like. There had been speculation about a hulking machine with more slots than a casino for new cards with more fins than a 1959 Cadillac.

As it turns out, EISA machines are not likely to be significantly larger than Micro Channel machines. EISA board connectors will be a little longer, to fit into deeper, two-tier slots. The upper tier of the internal slot will accommodate old 8- and 16-bit boards, and there will be a "stop" to prevent these older boards from going deeper into the second tier.

Boards designed specifically to take advantage of the 32-bit, second-tier EISA bus will be "notched." Only notched boards will be able to slip past the stops to work their way completely into the 32-bit cavity.

It comes as no surprise that while the EISA companies were clearing up some issues, I.B.M. was rumored to be preparing an "enhanced" version of the Micro Channel.

The 32-bit implementation, or version, of the Micro Channel is found in the machines with 32-bit (Intel 80386) processors, the PS/2 Models 70 and 80. A 16-bit version of the Micro Channel is found on PS/2 machines with 16-bit (Intel 80286) processors, the Models 50 and 60. I.B.M. is soon expected to introduce a new PS/2 based on the Intel 80386SX chip, which processes data in 32-bit chunks but communicates with the outside world in 16-bit chunks; such a machine would have the 16-bit Micro Channel. Both Compaq and I.B.M. are building computers based on a new, blazingly fast version of the Intel 80386 chip. One can assume that if there are changes in the Micro Channel, we would see them here.

The Micro Channel has some unused hooks and snaps that could be exploited to add more, as-yet-undefined, functions. "In any good implementation you leave areas for growth," said Dr. Robert Carberry of I.B.M..

Does this mean there will be a Micro Channel II, III and other sequels?

"There is just one Micro Channel, it is always compatible, and there is no notion of MCA I, II or III," an I.B.M. spokesman said.